

DAMAGE CONTROL TRAINING KITS USERS GUIDE



For general guidelines in the use of NAVSEA Damage Control Training Kits. This guide is only intended to assist the ships Damage Control Training Team in the integration of Damage Control Training kit props into existing damage control scenarios.

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SHIPBOARD FLAG TRAINING SET SG-DCFS-1

NAVSEA and ATG approved training props scheduled for fleet wide initial issue in OCT of 01.

- ***Standardizes damage control training props throughout the fleet.***
- ***Reduce workload on DCTT by reducing the time spend:***
 - ***Planning and setting up drills.***
 - ***Continous training of the crew on the meaning and purpose of each training prop.***
 - ***Developing own props and re-learning training props from different commands.***
- ***When used the kits accomplish several things, training crew members in Damage Control, system color-coding and future Advanced Damage Control Software Systems symbology.***
- ***Reduces verbal disclosure.***
- ***ATG approved .***

SHIPBOARD FLAG TRAINING SET

Simplified Damage ICONS IAW NSTM CHAP 079 VOL2 and DCAMS
symbology. Visual shipboard casualty damage presentation for training.

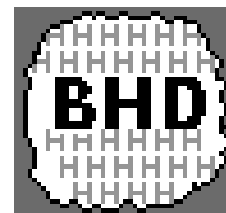
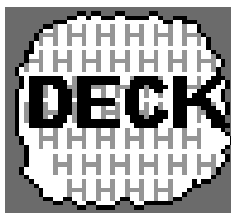
Part number SG-DCFS-1

FIRE KIT SG-FDK-1 STORAGE BAG	DC KIT SG-DCK-1 STORAGE BAG	MAIN SPACE KIT SG-MSDK-1 STORAGE BAG	SOUNDS OF DAMAGE CD
Flags included 2 UNCLASS FIRE 2 ALPHA 2 BRAVO 1 CHARLIE 1 DELTA 2 BLACK SMOKE 2 WHITE SMOKE 1 HEAT TRANSFER Strobe lights included RED AMBER BLUE FIRE CD	Flags included 1 FLOODING 1 JAMMED HATCH 1 RUPTURE 1 RUPTURE LO 1 RUPTURE FO 1 RUPTURE JP-5 1 RUPTURE FM 1 RUPTURE AFFF 1 RUPTURE CW 1 RUPTURE ECW 1 HOLE IN DECK 1 HOLE IN BKHD 1 HOLE IN OVHD 1 FRAG INVESTIGATOR CD SCENE CD BRIDGE CD SOUNDS OF DAMAGE CD DC DRILL GUIDE USEDGS GUIDE	Flags included 2 UNCLASS FIRE 2 ALPHA 2 BRAVO 1 CHARLIE 2 BLACK SMOKE 1 HEAT TRANSFER 1 RUPTURE FO 1 RUPTURE LO 1 RUPTURE JP-5 1 RUPTURE FM 1 RUPTURE HM Strobe lights included RED AMBER BLUE MAIN SPACE CD	SOUND TRACKS HIT ALPHA HIT BRAVO HIT BRAVO/CAS. HIT CHARLIE HULL FAILURE LONG EXPLOSION LARGE EXPLOSION LOW FIRE LP PIPE RUPTURE LP AIR OR STEAM MAIN SPACE FIRE MULTIPLE EXPLO RAPID BURNING ALPHA W/EXPLO RAPID ALPHA FIRE RAPID FLOODING SLOW FLOODING CHARLIE FIRE CREAKING FAILED SHORING WATER HITS FIRE BRAVO FIRE HP PIPE RUPTURE SLOW ALPHA

The DC Kit

The Damage Control Kit has ICONS that are designed to support hull, piping system and flooding damage. NAVY ships have sustained massive damage in recent years from various weapon hits, groundings and collisions. Some of the damage has been the result of fire, the majority however has been structural damage from impact or explosion.

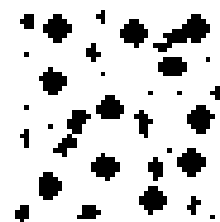
This kit focuses on the training of many types of damage usually not covered by the ships DCTT. Although simple in concept these ICONS represent some of the most dangerous damage to the ship and sailors.



Large and small holes in bulkheads, decks and overheads not related to flooding or hull damage are frequently not trained for and under estimated. The above three ICONS when used in combination represent the true damage a missile may inflict on a ship. Passageways are often rendered unsafe for use from multiple small damaged areas rather than a single giant hole. All the training ICONS in all the kits are designed to interact and play upon each other. The use of combinations of damage forces the repair party and it's leaders to think on multiple levels when fighting damage and to set priorities of action.

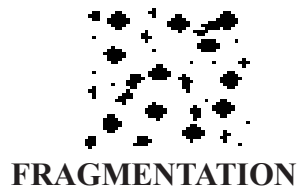
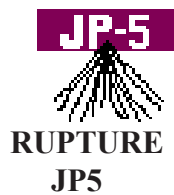
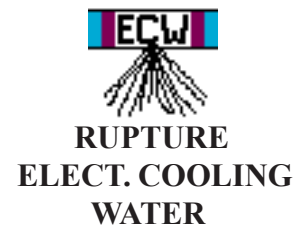
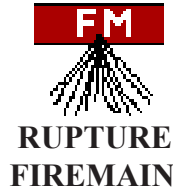


Jammed hatches, watertight and non-watertight doors have proven to be particularly dangerous to sailors. In berthing areas and mess deck spaces dozens of sailors can be trapped. They are at risk by progressive flooding , spreading fire and smoke. In recent shipboard casualties a jammed doors have isolated almost the entire Chiefs mess from the rest of the ship. The above ICON represents jammed access for use on any type of fitting or space.



The most dangerous type of damage may come from what can't be seen. Fragmentation damage often over looked could be hiding damage to vital piping systems. Fragmentation damage should motivate investigators to look harder for hidden damage in the vicinity.

Damage Control Kit ICONS





***BULKHEAD DAMAGE
REPORTED***



***BULKHEAD DAMAGE
ENGAGED***



***NO
BULKHEAD DAMAGE***

Each kit contains a matching flag for the ICON it represents. The flags consist of three panels. Each panel represents damage in various reporting stages. All damage under this system is reported as in one of the three stages, Reported, Engaged or No. This system makes the communicating of damage simple and clear.

Setting Up A Basic Hull Damage Drill (in-port)

For the purpose of this example the ship is moored port side to, cold iron and it is after normal working hours. The scenario will be a collision by another vessel that has lost power and steering. The ship is drifting out of control. Prior to starting the drill the in port DCTT will select the affected spaces and stage the drill props. For this scenario the following drill props will be required:

1. Hole in Bulkhead flag.



2. Hole in overhead flag.



3. Ruptured Firemain flag.



4. Ruptured Chill Water flag.



5. 2 Portable stereos (boom boxes).



6. 2 copies of the Sounds of Damage CD.



Training Objectives:

1. Demonstrate knowledge of space and system isolation.
2. Demonstrate knowledge of erecting steel shoring.
3. Demonstrate knowledge of using the jumper pipe patch system.

PROCEDURE FOR SET UP (set up time approximately five minutes):

1. Select a space located in a section of the ship exposed to the open harbor, it should have a section of Firemain and Chill water piping.
2. Place the Hole in Bulkhead flag displaying the damage reported ICON on the outboard bulkhead of the space.
3. Directly above the Hole in Bulkhead flag place the Hole on Overhead flag displaying the damage reported ICON.
4. Hang the Ruptured Firemain and Chill Water flags from appropriate piping system displaying the damage reported ICONS.
5. Set up the portable stereos with Sounds of Damage one for the Quarter Deck, one for the affected space.

Initiating the Basic Hull Damage Drill (in-port)

1. *From the Quarter Deck sound the collisions alarm followed by “All hands brace for shock”.*
2. *Play track #5 from the Sounds of Damage :“Hull Failure” . A slow grinding sound of the hull giving way.*
3. *Pass the word “Collision _____side, Frame_____ in port, emergency team respond”.*

At The Scene:

1. *Play track #22 from the Sounds of Damage :“High Pressure Pipe Rupture”.*
2. *As the emergency teams takes action correctly, display the corresponding damage ICON on the affected damage flag, for example:*

- *Firemain is isolated.*



- *Chill water pipe is isolated.*



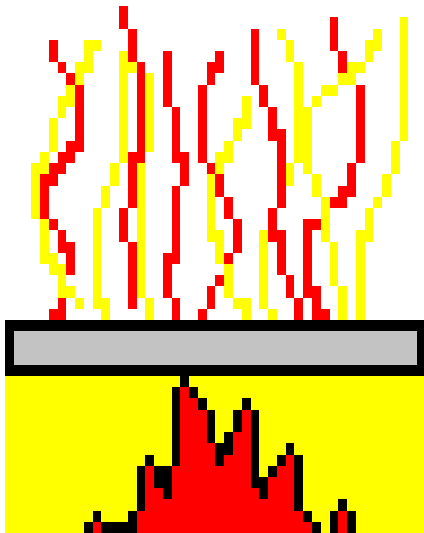
- *Steel shoring is in place and a shoring watch set.*



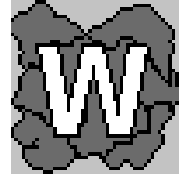
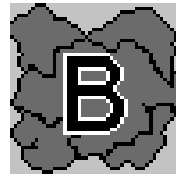
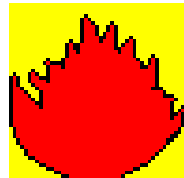
3. *Another method for showing correct actions is to adjust the level of volume from the CD to indicate a slowing of water flow.*
4. *As each Damage ICON is changed note the time for latter comparison against the Damage control repair station plot.*

The Fire Kit

The Fire Kit has ICONS that are designed for fire, smoke and the radiant transfer of heat from fire. All classes of fire and both white and black smoke are represented. The kit also contains 3 small color-coded waterproof strobe lights designed to complement the flags. The smoke flags can be used as a stand alone prop or in combination with a NAVSEA approved smoke machine.

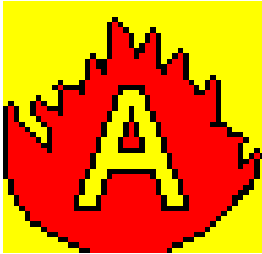


The heat transfer ICON is used to indicate heat radiating from a bulkhead, deck, door or overhead. It can be used to train fire boundary personnel or investigators. One very valuable use is as a tool to start drills without verbal disclosure. Hanging a heat transfer flag on a door normally accessed by a roving watch and playing a fire track from the Sounds of Damage is an ideal way to start a drill and judge watch standers actions.

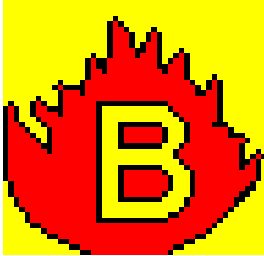


Combining the strobe lights, fire flags, smoke flags, smoke machine, and a fire track from the Sounds of Damage creates the ultimate non-verbal disclosure fire drill. Each strobe light color is designed to work with a different class of fire.

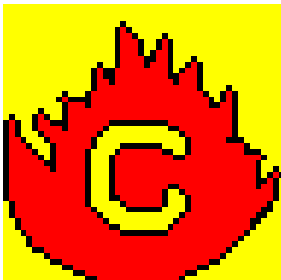
Fire Kit ICONS



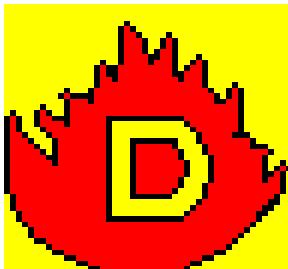
*Class Alpha fire with
Red strobe light*



*Class Bravo fire with
Amber strobe light*



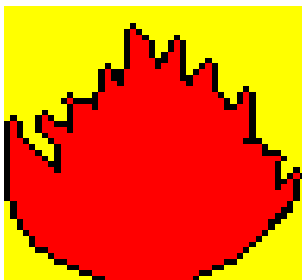
*Class Charlie fire with
Blue strobe light*



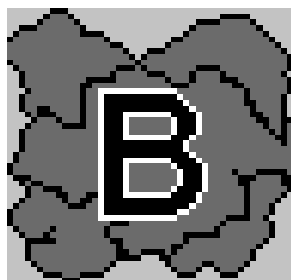
*Class Delta
fire*



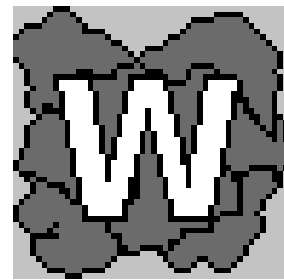
Heat Transfer



Un-class fire



Black Smoke



White Smoke



Class Alpha fire reported



Black Smoke reported



Class Alpha fire engaged



Black Smoke engaged



No Class Alpha fire



No Black Smoke

Setting up a basic fire drill (in-port)

For the purpose of this example the ship is moored pier side, cold iron and it is after normal working hours. The scenario will be a class Alpha fire caused by oily rags in a workshop. Prior to starting the drill the in port DCTT will select the affected space and stage the drill props. For the scenario the following drill props will be required:

1. *Alpha class fire flag.*



2. *White smoke flag*



3. *Heat transfer flag.*



4. *Red strobe light.*



5. *Smoke machine.*



6. *Sounds of Damage CD.*



7. *Portable stereo.*



Training Objective:

1. *Demonstrate knowledge of setting fire and smoke boundaries.*
2. *Demonstrate knowledge of hose handling.*
3. *Demonstrate knowledge of proper battle dress.*

PROCEDURE FOR SET UP (set up time approximately five minutes):

1. Select a space that is used for PMS such as the A division shop.
2. Start up the smoke machine on low and crack space door.
3. Hang the heat transfer ICON flag on the outside of the space door.
4. Play track #14 from the sounds of damage.
5. Turn on and hang the red strobe light near an area with Alpha material in the space.
6. Stand by with white smoke flag and Alpha fire flag.

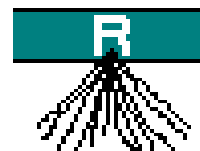
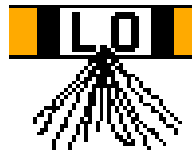
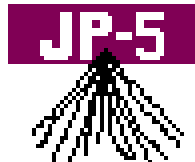
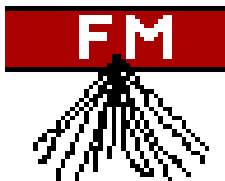
INITIATING THIS DRILL:

This drill will start when a passer by or watch spots or smells the smoke or hears the fire. Upon investigation he or she will see the heat transfer ICON, the smoke, and hear the fire.

The Main Space Kit

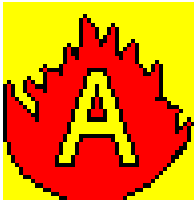


The main space kit combines strobe lights; fire flags, and smoke flags, flammable leak flags, and a CD replicating machinery a space fire. This kit is specifically designed to simplify the process of conducting an in port main space fire drill for a small DCTT. The kit is also useful in conducting pump room and auxiliary space drills, any space where the combination of flammable leak ICONS and fire can be used.

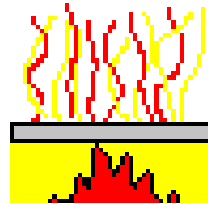


The flammable leak and ruptured piping system ICONS are designed to serve two purposes. One being to represent a leak, the other to train personal in the color-coding of piping systems. Each ICON matches either the hand wheel or pipe markings for the piping system it represents. For generic leaks a MISC rupture flag is included in the

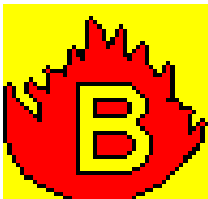
Main Space Kit ICONS



*Class Alpha fire with
Red strobe light*



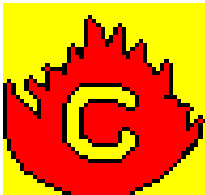
Heat Transfer



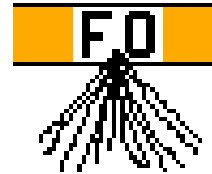
*Class Bravo fire with
Amber strobe light*



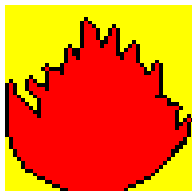
White Smoke



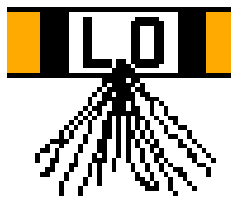
*Class Charlie fire with
Blue strobe light*



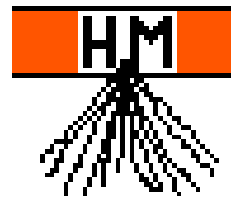
Rupture fuel oil



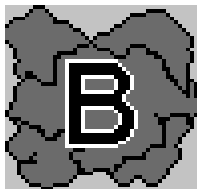
Un-class fire



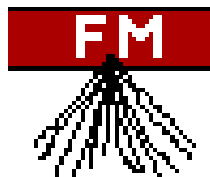
Rupture Lube oil



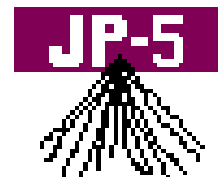
Rupture hydraulic oil



Black Smoke



*Rupture
firemain*



Rupture JP5



*Rupture FO
reported*



*Rupture FO
engaged*



*Rupture FO
out*



*Bravo fire
reported*



*Bravo fire
engaged*

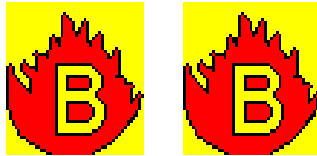


*Bravo fire
out*

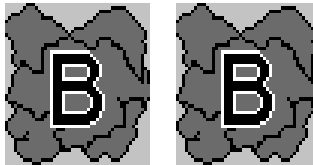
Setting up a basic main space fire (in port)

For the purpose of this example the ship is moored pier side in port, cold iron and it is after normal working hours. The main engine lube oil system is in operation and a cold iron watch is set. A class bravo fire will start from a leak on the discharge side of the lube oil pump piping. This drill example is designed to train the in port emergency team only. For this scenario the following props will be required:

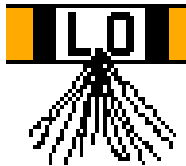
1. Bravo class fire flags.



2. Black smoke flags.



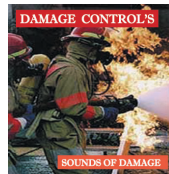
3. Lube oil leak ICON.



4. Amber strobe light.



5. Sound of Damage.



6. Portable stereo.



Training Objective:

1. Demonstrate knowledge of the main space machinery layout.
2. Demonstrate setting a smoke control zone.
3. Demonstrate hose man turnover.

Procedure for setting up and initiating this drill:



1. Place the ruptured lube oil flag on or near the discharge side of the lube oil pump piping.



2. Play track #22 high-pressure pipe rupture from the sounds of damage.



3. Stand by with the class bravo fire, black smoke flags and amber strobe light.



When the cold iron watch responds to the sound of the high-pressure leak take initiate the following events:

(NOTE: a reminder the purpose of this example drill is to train the in port emergency team and not the watch, no matter what actions the watch takes a major fire will start):

1. *Change to track #11 of the Sounds of Damage main space fire. The sound will go from a pop, leak and then flash to a fire. When the track reaches the fire section, turn on the strobe light, display the class bravo fire flag and black smoke flag and drive the watch out of the space.*
2. *When the emergency team is ready to re-enter the space stand by with the fire and smoke flags. As they correctly go through each action display the correct ICON. A proper some control zone would indicate smoke engaged. A correct space re-entry would indicate class bravo fire engaged.*
3. *Adjusting the volume of the Sounds of Damage lower and lower as the fire team approaches is another indicator that the fire team is acting correctly to control the fire.*

THE SOUNDS OF DAMAGE

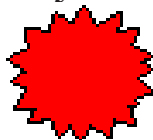


The Sounds Of Damage are designed to assist the Damage Control Training Team (DCTT) in implementing drill sets with minimal verbal disclosure. The damage sound tracks are based on a combination of sounds that when played together create an entire casualty event. This allows an entire drill to be choreographed from start to finish with background noise an real life confusion with very little verbal disclosure. Actual noise also allows the emergency team to move from one event to the next without prompting.

Volume one; Version one contains these sound tracks:

1. Hit Alpha Mine Hit

As the ship passes through a mine field and hits a mine. A large explosion is followed by water slowly rushing in and gradually building to the sounds of major flooding.



2. Hit Bravo Missile Hit

The sounds of a missile firing is followed by and small primary explosion and then a larger secondary explosions and fire.



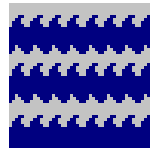
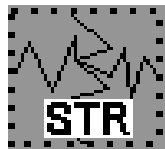
3. Hit Bravo Missile Hit with casualties
the same as above but with cries for help.

4. Hit Charlie torpedo Hit,

A large explosion and the sounds of water rushing in follow the sounds of the ship being ping and propeller noise. Sonar sound sets the atmosphere of a TSC tracking and engaging a submarine in battle.



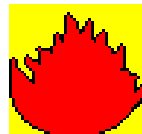
5. Hull failure steel creaking and collapse followed by flooding, this can be played as investigators seek out damage after an explosion has been played over the ships IMC.



6. Long explosion, played from the ships IMC can be used to represent a variety of distant explosions.

7. Large Explosion this can be used to start a drill based a variety of close weapon impacts. Combining it with Hull failure or fires will assist fitting the Sounds of Damage into scenarios the ship has already practice.

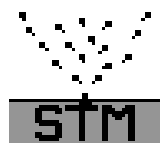
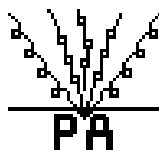
8. Low fire burning, possible class Alpha.



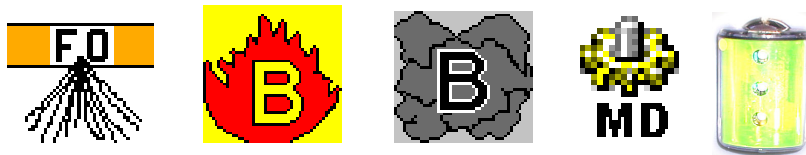
9. Low pressure pipe rupture, water spray.



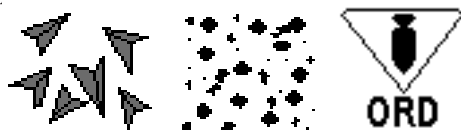
10. L.P air or Steam leak.



11. Main Space Fire, a fuel line ruptures with a pop, followed by fuel oil spray flashing into fire. A roaring main space fire follows this. The loud background class bravo fire can be played from more than 1 location simultaneously creating the feeling of a massive fire. As fire teams attack the fire the volume can be slowly turned down or shut off to represent the attack team getting the fire under control.



12. Multiple explosions.

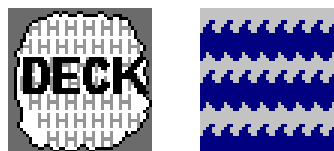


13. Rapid burning Alpha fire with small background explosions.

14. Rapid burning Alpha fire.



15. Rapid progressive flooding, the sounds of watering bubbling in and moving from space to space and a rapid pace.



16. Slow progressive flooding; this is the sound of water slowly filling a space. It could also be used for free communication with the sea.

17. Charlie Fire, The sound of arcing and sparking with pops and clicks in the background. Much louder than an actual class Charlie fire for training purposes, enables the DCTT when using the CD with a blue strobe light to implement class Charlie fire more effectively.



18. Creaking, the sounds of steel creaking, Use as background noise after an explosions, grounding or collision at sea scenario is implement.



19. Failed Shoring, creaking followed by pop as wood shoring gives way, followed by flooding from the sea.

20. Water Hitting Fire, the sounds of sizzling as water hits a hot fire from a fire hose or other source.

21. Roaring Class Bravo Fire, very loud, use fuel for pump room fires.

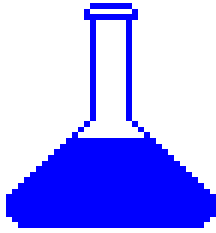
22. High Pressure Pipe Rupture, Water spray at high velocity or fuel oil spray.

23. 2nd Slow Burning Alpha Fire.

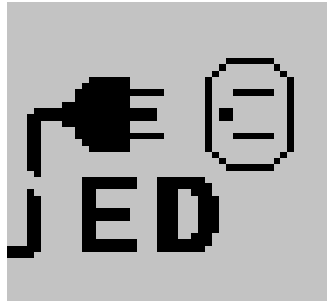


Damage Control's
The Sounds of Damage

OTHER ICONS



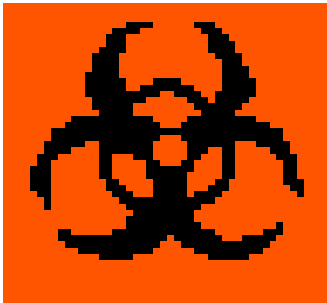
**Chemical
hazard**



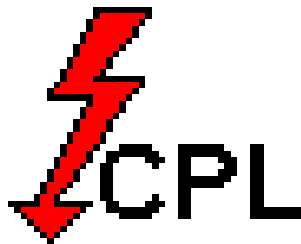
Electrical power loss



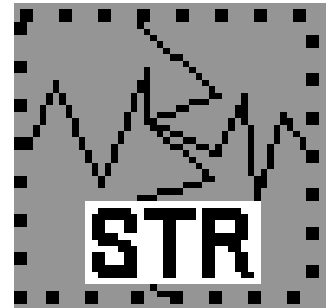
Debris



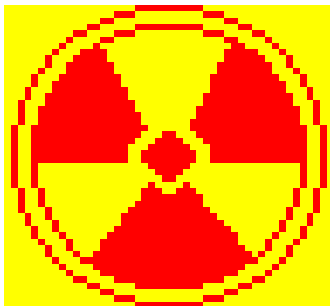
**Biological
hazard**



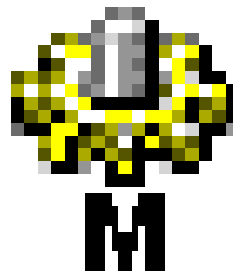
Casualty power



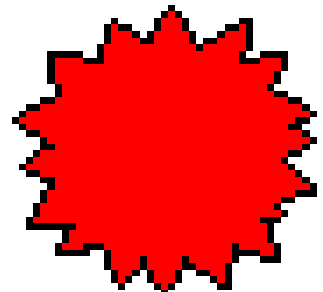
Structural damage



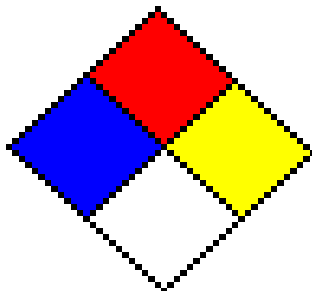
Radiation hazard



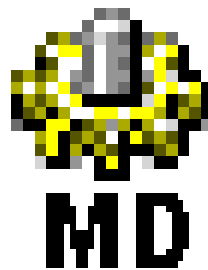
Mechanical failure



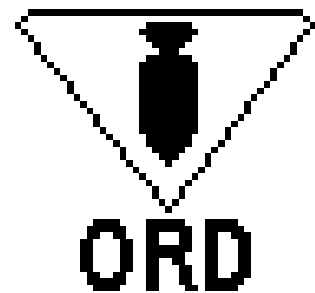
Impact



Hazmat toxic spill



Mechanical damage



Unexploded ordnance